



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/526,984      | 09/23/2005  | Didier Roziere       | 0501-1127           | 6990             |

466 7590 01/22/2008  
YOUNG & THOMPSON  
745 SOUTH 23RD STREET  
2ND FLOOR  
ARLINGTON, VA 22202

EXAMINER

ZHU, JOHN X

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2858

|           |               |
|-----------|---------------|
| MAIL DATE | DELIVERY MODE |
|-----------|---------------|

01/22/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/526,984

Applicant(s)

ROZIERE, DIDIER

Examiner

John Zhu

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-17,19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5,6 and 19 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,7-17 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/28/2007 has been entered.

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "linking tracks" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp (5,325,442) in view of Roziere et al. (FR 2,756,048).

With respect to claim 1, Knapp discloses a capacitive proximity sensor comprising at least one detection antenna (Fig. 1, element 10) comprising a plurality of capacitive proximity sensors each with a single measurement electrode (Fig. 3, elements 14), electronic means for exciting (Fig. 1, element 22) the electrodes and processing (Fig. 1, element 24) signals from the electrodes, and digital means (Fig. 9, computer) for controlling and processing proximity measurements.

Knapp does not disclose the electronic means comprise for each detection antenna, a floating capacitive bridge cooperating with polling means to measure

sequentially the respective capacitances between each of the measurement electrode of antenna and the object or body to be measured. Knapp also does not disclose the function limitation of "the antenna movably approaching an object or a body", however, as the claim is directed an apparatus, the claim must be distinguished from the prior art in terms of structure rather than function alone. See MPEP 2114.

Roziere discloses a floating capacitive bridge (Applicant's spec, page 11, lines 14-23) with polling means (Fig. 6, MUX) that sequentially take the input from the electrodes to be processed.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the floating capacitive bridge with polling means as taught by Roziere into the system of Knapp for the purpose of reducing the effects of parasitic capacitances (Page 1, lines 8-13).

With respect to claim 4, it is noted that features of an apparatus must be recited either structurally or functionally, and claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. Since claim 4 recites functional language of measuring, the structure is identical to the structure of claim 1, which is rejected in view of Knapp and Roziere.

With respect to claim 11, Knapp further discloses the electronic means, digital control and calculation means cooperate to deliver proximity detection threshold signals (Fig. 9).

5. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp and Roziere as applied to claim 1 above, and further in view of Vranish.

With respect to claims 2 and 9, Knapp and Roziere do not explicitly disclose a single shield for all the measurement electrodes of the antenna arranged to modify the field lines of the electrodes.

Vranish discloses a single shield (Fig. 4c, shield 2) for all the measurement electrodes (sensing elements 12) arranged to modify the field lines of the electrodes.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the single shield as taught by Vranish into the system of Knapp and Roziere for the purpose of insulating the sensing elements for interfering signals.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp and Roziere as applied to claim 1 above, and further in view of Coveley (5,952,835).

With respect to claim 7, Knapp and Roziere do not explicitly disclose delivering an alarm signal indicating an inconsistent measurement.

Coveley discloses setting off an alarm when a measurement is deemed to be inconsistent (outside a predetermined threshold, column 4, lines 60-64).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the alarm condition as taught by Coveley

into the system of Knapp and Roziere for the purpose of indicating that an object is removed from the sensing plate (Column 4, lines 60-61).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp and Roziere as applied to claim 1 above, and further in view of Stanley et al. (6,703,845 B2).

With respect to claim 8, Knapp and Roziere do not explicitly disclose reference capacitances provided to check the calibration.

Stanley discloses reference capacitances (Column 10, lines 27-28) for checking the calibration of the measuring system.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the reference capacitances as taught by Stanley into the system of Knapp and Roziere for the purpose of allowing the system of continuously compensate for variations in the measurement circuit (Column 10, lines 27-29).

7. Claims 10, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp and Roziere as applied to claim 1 above, and further in view of Lane (5,623,552).

With respect to claims 10 and 14, Knapp and Roziere do not explicitly disclose the proximity detector is arranged on the outside surface of a box and comprises a plurality of measurement areas equipped with detection antennas. Knapp and Roziere

also do not disclose edge antennas arranged in part over one face of cap and in part over another contiguous face.

Lane discloses a proximity sensor with multiple areas of proximity detectors (Fig. 4, detectors 140) arranged on the outside of a box in which edge antennas are arranged in part over one face of cap and in part over another face.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the box structure and edge antennas as taught by Lane into the system of Knapp and Roziere for the purpose of detecting a the presence of a fingerprint.

With respect to claim 12, Knapp further discloses the electronic means and the digital control and calculation means cooperate to deliver output signals of objects detected (Fig. 1, element 24 and Fig. 9).

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp, Roziere and Lane as applied to claim 10 above, and further in view of Crawford (US PG Pub no. 2002/0122006).

With respect to claim 13, Knapp, Roziere and Lane disclose all aspects of the claim except for the antennas are arranged on five faces of the box or cap.

Crawford discloses a box antenna with antennas arranged on five faces of the box or cap ("two or more noncoplanar walls", Abstract, lines 1-3).



Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the antenna system of Knapp to incorporate the plural antennas on walls as taught by Crawford for the purpose of sensing signals for all direction to address the multipath problem of multipath environments (Page 1, paragraph 0005).

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp and Roziere as applied to claim 1 above, and further in view of Lind (6,225,939 B1).

With respect to claim 15, Knapp and Roziere do not explicitly disclose at least one of the antennas is produced using a flexible circuit.

Lind discloses an impedance sheet which could be used for proximity measurement comprising a flexible dielectric material (Fig. 1, dielectric 20) in between conductors (impedance elements 22).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the flexible sheet as taught by Lind into the system of Knapp and Roziere for the purpose of reliability and endurance as a strong flexible material would not be as easily subjected to breaks and fissures.

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp and Roziere as applied to claim 1 above, and further in view of McDonnell et al. (6,348,862 B1).

With respect to claim 16, Knapp and Roziere disclose all aspects of the claim except for at least one of the antennas is connected to the electronic means by flexible connecting means.

McDonnell discloses flexible connecting means (Fig. 3, cable 58) is used to connect the antenna to the electronic means (Fig. 1, sensor circuit).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the flexible connecting means as taught by McDonnell into the system of Knapp and Roziere for the purpose of providing a reliable medium for connecting the antenna and the electronics.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp and Roziere as applied to claim 1 above, and further in view of Habraken et al. (5,883,935).

With respect to claim 17, Knapp and Roziere do not explicitly disclose the proximity sensor used in an x-ray machine with a proximity detector arranged on the inside or outside of a cap, with an x-ray antenna comprises a piercing provided for the passage of the x-ray beam.

Habraken discloses a proximity detector with an x-ray machine with detectors formed on the cap (Fig. 1, detector 6) with an x-ray emitter (4) providing an x-ray beam through the piercing (Fig. 2a, circular passage).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the x-ray machine with piercing and

proximity detector as taught by Habraken into the system of Knapp and Roziere for the purpose of detecting an object when performing a radiological test.

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp and Roziere as applied to claim 1 above, and further in view of Travanty et al. (4,987,583).

With respect to claim 20, Knapp and Roziere do not explicitly disclose a proximity detector arranged on the inside or outside surface of an x-ray emitter device.

Travanty discloses proximity sensors (Fig. 1, pressure sensors 46, 49) on an x-ray emitter device (X-ray source 14).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the proximity sensors as taught by Travanty into the system of Knapp and Roziere for the purpose of detecting a collision between a component and a patient under test in a x-ray apparatus (Abstract, lines 1-4).

#### ***Allowable Subject Matter***

13. Claims 5, 6 and 19 are allowed.

15. Claim 5 is allowable over the art of record because the prior art does not teach or suggest a detection antenna comprises a test track which in normal operation, is at the potential of a shield and in test mode, is earthed.

Claim 6 is allowable as it depends from claim 5.

Claim 19 is allowable over the art of record because the prior art does not teach or render obvious the entire combination including an x-ray antenna comprising a copper layer being removed over an area which corresponds to the passage of the X-ray beam and in which the linking tracks and the capacitive electrodes are produced from the chromium layer.

### ***Response to Arguments***

6. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., dynamic detector, Page 11, paragraphs 1-4) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

7. In response to applicant's argument that there is no suggestion to combine the references of Knapp and Roziere because the "reduction of the effects of parasitic capacitance does not cope with the charge accumulated into the dielectric layer between the finger surface and the corresponding sense electrode. This charge forbids dynamic measurement as required for a proximity detector." (Page 12, paragraph 1), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references

themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it has been noted by Roziere that the floating circuit minimizes parasitic capacitance linking the electrode (15) to the charge amplifier (3). With the configuration of the capacitive sensor of Knapp nearly identical (Fig. 5b, charge amplifier 50 coming from the sensing electrode), the motivation of reducing parasitic capacitance is used. The examiner is unclear as to how the charge accumulated into the dielectric layer has to do with the current rejection. Furthermore, the examiner points out that the limitation of "dynamic measurement" is not explicitly claimed or present in the specification, and the dynamic measurement is not a requirement of proximity sensors and the fingerprint sensor of Knapp is in fact a proximity detector - it detects the presence of valleys by measuring capacitance.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Harkin (6,411,727 B1) discloses a capacitance sensor comprising dynamic circuitry that does not involve discharging the capacitor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Zhu whose telephone number is (571) 272-5920. The examiner can normally be reached on M-F, 8-4:30.

Application/Control Number:  
10/526,984  
Art Unit: 2858

Page 13

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Zhu  
Examiner  
Art Unit 2858



JZ



**ANDREW H. HIRSHFELD**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**